

1 CLAIM 1. An integrated cooling device, comprising:
2 a reservoir configured to contain a liquid coolant;
3 a pump disposed within said reservoir, said pump being configured to
4 circulate said liquid coolant between said reservoir and a heat source; and
5 a fan configured to provide a flow of air across said circulating liquid
6 coolant.

1 CLAIM 2. The integrated cooling device of claim 1 wherein said liquid coolant is
2 circulated through a tubing arrangement.

1 CLAIM 3. The integrated cooling device of claim 1 further comprising a motor
2 disposed within said reservoir, said motor being operably connected to said pump and
3 said fan.

1 CLAIM 4. A cooling unit configured to circulate a liquid coolant, said cooling unit
2 comprising:
3 a reservoir configured to contain said liquid coolant;
4 a tubing arrangement disposed at an outer surface of said reservoir, said
5 tubing arrangement being fluidly communicable with a heat exchanging device;
6 a pump disposed within said reservoir, said pump being configured to
7 circulate said liquid coolant through said tubing arrangement to said heat exchanging
8 device; and
9 a fan configured to provide a flow of air across said tubing arrangement.

1 CLAIM 5. The cooling unit of claim 4 further comprising a motor disposed within
2 said reservoir, said motor being operably connected to said pump and said fan.

1 CLAIM 6. The cooling unit of claim 4 wherein said tubing arrangement is coiled over
2 said outer surface of said reservoir.

3

4 CLAIM 7. The cooling unit of claim 4 wherein said fan is configured to provide a
5 forced induction of air over said tubing arrangement.

1 CLAIM 8. The cooling unit of claim 4 further comprising a plurality of fins disposed
2 over said tubing arrangement, said fins extending longitudinally in a direction of said
3 flow of air across said tubing arrangement.

1 CLAIM 9. The cooling unit of claim 8 wherein said fins are tubular in structure.

1 CLAIM 10. The cooling unit of claim 9 wherein said tubularly structured fins are open
2 at the ends thereof, thereby allowing said flow of air to be maintained within said fins.

1 CLAIM 11. The cooling unit of claim 8 wherein said fins are fabricated from copper,
2 copper alloys, aluminum, aluminum alloys, and combinations of the foregoing materials.

1 CLAIM 12. The cooling unit of claim 8 further comprising a shroud disposed over said
2 fins.

1 CLAIM 13. The cooling unit of claim 12 wherein said shroud defines a primary air
2 inlet at a lower end thereof.

1 CLAIM 14. The cooling unit of claim 12 wherein said shroud includes a secondary air
2 inlet disposed therein, said secondary air inlet being configured to allow for airflow
3 communication between opposing sides of said shroud.

1 CLAIM 15. The cooling unit of claim 14 wherein said secondary air inlet is positioned
2 on said shroud to register with a space defined by adjacently positioned fins.

1 CLAIM 16. The cooling unit of claim 14 wherein said secondary air inlet includes an
2 air directing tab associated therewith, said air directing tab being configured to channel
3 air into said secondary air inlet upon a forced induction of air by said fan.

1 CLAIM 17. The cooling unit of claim 12 wherein said shroud is fabricated from a
2 material selected from the group consisting of plastic, metal, fiberglass, and combinations
3 of the foregoing materials.

1 CLAIM 18. The cooling unit of claim 4 further comprising a cover disposed over said
2 fan.

1 CLAIM 19. The cooling unit of claim 18 wherein said cover comprises,
2 a frame, and
3 a plurality of vanes pivotally mounted within said frame, said vanes being
4 configured to rotate into an open position in response to an airflow generated by said fan.

1 CLAIM 20. A thermal dissipation system, comprising:
2 a heat exchanging unit; and
3 a cooling unit disposed in fluid communication with said heat exchanging
4 unit, said cooling unit comprising,
5 a reservoir,
6 a pump disposed within said reservoir, said pump being configured to
7 circulate a liquid coolant between said reservoir and said heat exchanging unit, and
8 a fan configured to remove heat from said liquid coolant.

1 CLAIM 21. The thermal dissipation system of claim 20 wherein said heat exchanging
2 unit is a cold plate.

1 CLAIM 22. The thermal dissipation system of claim 21 wherein said cold plate is
2 disposed in communication with electronic circuitry.

1 CLAIM 23. The thermal dissipation system of claim 20 wherein said cooling unit
2 further comprises a motor disposed in operable communication with said pump and said
3 fan, said motor being disposed within said reservoir.